

to the prosperity of this country, the President and Fellows of the Royal Society may always depend upon my countenance and approbation, as I am convinced they will receive the support and protection of the King."

The Members of the Council were then severally presented to Her Majesty by His Royal Highness, and had the honour of kissing Her Majesty's hand.

March 17.

HIS ROYAL HIGHNESS THE DUKE OF SUSSEX,
President, in the Chair.

The Rev. Thomas Smith Turnbull, M.A.; Christopher R. M. Talbot, Esq.; and Henry Fox Talbot, Esq.; were elected Fellows of the Society.

The following Presents were received, and thanks ordered for them:—

The Nautical Almanac and Astronomical Ephemeris for the Year 1833. 8vo. (3 Copies.)—*Presented by the Lords Commissioners of the Admiralty.*

Second Supplement to an Essay on the Theory of Systems of Rays.

By W. R. Hamilton, Esq. 4to.—*The Author.*

On the Error of a received Principle of Analysis, respecting Functions which vanish with their Variables. By the same. 4to.—*The Author.*

Address of Earl Stanhope, President of the Medico-Botanical Society, for the Anniversary Meeting, Jan. 1831. 8vo.—*The Author.*

A Catalogue of Books in the Library of the Company of Clock-makers of the City of London. 8vo.—*The Company.*

Kongl. Vetenskaps-Academiens Handlingar, för år 1827. 8vo.

— för år 1828. 8vo.—*The Academy.*

Register öfver Kongl. Vetenskaps-Academiens Handlingar, ifrån och med 1813, till och med 1825.—*The Academy.*

Årsberättelser om Vetenskapernas Framsteg, afgifne af Kongl. Vetenskaps-Academiens Embetsmän, d. 31 Mars 1828.—*The Academy.*

Memorie della Reale Accademia delle Scienze di Torino. Tomo XXXIV. 4to.—*The Academy.*

Handleiding tot het Vinden der Ware Sterkte van het Acidum Aceticum door vande Digtheid. Na voorafgegane Proeven opgesteld door A. van der Toorn. 4to.—*The Author.*

A Paper was read, entitled, "Proposed Plan for supplying filtered Water to the Metropolis and its Suburbs." By Lemuel Wellman Wright, Esq., Civil Engineer. Communicated by T. J. Pettigrew, Esq. F.R.S.

The author, after giving extracts from the Report of the Commissioners appointed by His late Majesty to inquire into the supply

of water to the metropolis, in support of the practicability of affording a supply of filtered water from the Thames, adequate to the demand, and within reasonable limits in point of expense, proposes his plan of forming a filter under the bed of the river for each Company. He states that the deposit of mud on each side of the Thames does not reach below the low-water mark, and that the bed of the river throughout is generally a clean and strong, though porous gravel. The mud, therefore, will puddle in, and close the pores of the bed of gravel on which it lies, above low-water mark, so that the filtration into the neighbouring wells, the waters of which are remarkably pure, must take place below low-water mark. He therefore proposes to construct a filtering chamber below the bed of the river, from which chamber a main pipe or tunnel must be made for conducting the filtered water into a well on the river side, whence it is to be drawn up by steam power, and distributed to the houses to be supplied, by the mains and branches at present existing.

The filtering chamber and apparatus are to be prepared by erecting a coffer-dam in the river, of sufficient size to inclose the whole of the area required for that purpose. This coffer-dam will require piles of forty-five feet in length. The bed of the river, thus laid dry, is to be dug out, and a bed of brick-work, set in cement, laid down: a floor must then be constructed in the form of an inverted segment of an arch. On the top of the walls of this floor, plates are to be laid, and in the inclosed area, granite blocks placed; upon these again, the girders are to be laid, and over these the joists, which are to support a first layer of large flints. Upon these, successive layers of smaller flints are to be laid, each decreasing in size as they approach the bed of the river. Upon the uppermost of these, a stratum of clean shingle is to be deposited; then a bed of fine and very clean gravel; and lastly a bed of filtering sand, until it arrives within a foot of the bed of the river, which last space must then be filled up with clean gravel; thereby forming a filtering bed of eight feet in depth, the top of which will still be four feet below low-water mark. So that, allowing seven feet for the timbers and brick-work below, and eighteen feet for the rise and fall of the tide, the total depth at high-water will be thirty-seven feet.

The paper is accompanied by a lithographic drawing, which exhibits the several parts of the scheme.

A Paper was read, entitled, "On the Variable Intensity of Terrestrial Magnetism, and the Influence of the Aurora Borealis upon it." By Robert Were Fox. Communicated by Davies Gilbert, Esq. V.P.R.S.

The author gives the results of a series of observations on the vibrations of the magnetic needle, which he undertook last summer, for the purpose of ascertaining whether the intensity of its directive force is affected by the changes in the earth's distance from the sun, or by its declination with respect to the plane of its equator. He observed that the magnetic intensity is subject to frequent variations, which are sometimes sudden, and of short duration. These anoma-